Catecholamine Studies May Differentiate Depressed Patients

By ANASTASIA TOUPEXIS
Medical Tribune Staff

BOSTON—Clinical measurements of catecholamine metabolism may eventually help doctors differentiate among the subtypes of depression, according to Harvard psychiatrist Joseph J. Schildkraut.

Recent findings appear to support the hypothesis, first suggested in 1965, that "various measures related to catecholamine metabolism may provide a clinically useful biochemical basis for classifying the depressive disorders," Dr. Schildkraut told a symposium here on depression, sponsored by McLean Hospital, Belmont, Mass.

The findings, which come out of joint studies by Harvard Medical School's psychiatry department, McLean Hospital, and the Neuropsychopharmacology Laboratory of the Massachusetts Mental Health Center, include the following:

- Urinary excretion of 3-methoxy-4-hydroxyphenylglycol (MHPG), the major metabolite of norepinephrine originating in the brain, was significantly higher in unipolar depressives compared to bipolar manic-depressive and schizoaffective patients.
- A depression type score (derived from multiple discriminant function analysis of urinary catecholamines and metabolites) distinguished accurately between unipolar patients and those with bipolar and schizoaffective illness. In addition, the score was helpful in identifying depressed patients with a latent predisposition to bipolar illness before appearance of the first manic or hypomanic episode, according to Dr. Schildkraut.
- Platelet monoamine oxidase activity was useful in making "clinically relevant distinctions within the group of depressed patients with relatively low MHPG excretion," Dr. Schildkraut said. The combination of high platelet monoamine oxidase activity and low MHPG excretion was associated with patients who had histories of chronic asocial, eccentric or bizarre behavior and experienced psychosis when treated with tricyclic antidepressants.

The differential point in urinary MHPG excretion levels appears to be 1500 μg/day, Dr. Schildkraut indicated. "Considering the total sample of 37 depressed patients, we found that 13 of the 15 patients with schizoaffective or bipolar manic-depressive depressions had MHPG levels less than 1500 μg/day, whereas in 12 of the 13 patients with unipolar chronic characterological or unipolar nonspecific depressions the levels of MHPG were 1500 μg/day or higher," he said.

Dr. Schildkraut noted that three patients thought to have unipolar endogenous depression had MHPG levels below 1500 μg/day. The low MHPG level suggests that some unipolar endogenous depressives may be "biochemically heterogeneous" or that these patients were actually latent bipolar depressives, incorrectly classified as unipolar because a manic episode had not yet occurred, Dr. Schildkraut said.

The researchers found that the MHPG difference between depression subtypes could not be explained by differences in severity of depression, sex, age, urine volume or creatinine excretion.

Although other urinary catecholamines and metabolites were measured, including norepinephrine, normetanephrine, epinephrine, metanephrine and 3-methoxy-4-hydroxymandelic acid (VMA), "only MHPG showed highly significant differences among the subgroups of depressive disorders," Dr. Schildkraut reported.

However, the researchers could not rule out the possibility that the other urinary metabolites might also contain useful information. Using urine metabolite data, a discrimination equation was developed which produced characteristic scores for depression types.

Precise Differences

In this formulation, low scores (below 0.500) were related to bipolar manic depression and high scores (above 0.500) to chronic unipolar depression, Dr. Schildkraut said.

One patient, considered to have a unipolar disorder, scored 0.381. "One year after the biochemical studies were performed, this patient experienced his first hypomanic episode," Dr. Schildkraut noted.

"The present findings suggest that this equation may provide an even more precise discrimination between these types of depressive disorders than does urinary MHPG alone," he said.

Preliminary findings with 25 patients suggest that "relatively high platelet monoamine oxidase activity (greater than 7 nanomoles tryptamine deaminated/hr/mg protein) in conjunction with low MHPG excretion (less than 1500 μg/day) may help to discriminate a further subgroup of depressive disorders, characterized clinically by histories of chronic asocial, eccentric or bizarre behavior and the propensity for psychotic disorganization (clinically distinguishable from hypomanic or manic states), particularly when treated with tricyclic antidepressant drugs."

"In contrast depressed patients with low MHPG and relatively low platelet monoamine oxidase activity may constitute another subgroup of depressive disorders that includes bipolar manic-depressive and related disorders."

In Suffering, Terminal Patients:

77% of U.S. Family Physicians Would Consider Passive Euthanasia

Medical Tribune Report

What do American family physicians think of euthanasia today? The results of a major poll, conducted by MEDICAL TRIBUNE and published in this issue, provide what may be the first reliable answer. An identical survey of French general practitioners' attitudes, sponsored by *La Tribune Médical*, appeared on these pages last week.

What might be the expected differences between the two populations? Euthanasia is unquestionably a significant issue throughout the Western world, but nowhere more so than in the United States, with its vast arma-

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Have you had a terminally ill patient ask you to cut short his suffering?

		Age of Physicians		
	TOTAL	35 years and less	36 to 50 years	Over 50 years
Yes	57%	33%	54%	60%
No	43%	67%	46%	40%

Medical Tribune and Medical News

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Diabetes Assn. Says:

Control of Sugar In Blood Is Main Goal of Therapy

By NATHAN HOROWITZ
Medical Tribune Staff

NEW YORK—In a major policy statement, the American Diabetes Association has declared that blood sugar control should be a principal goal of diabetic therapy, and has urged physicians to aim for blood glucose levels in the diabetic "as close to the non-diabetic as possible."

Taking its stand on an issue that has been a center of controversy among diabetologists for almost 50 years, the ADA said the cumulative data of animal studies, biochemical studies in man and at least one prospective study all point to the conclusion that prolonged hyperglycemia is a factor in the microvascular complications of diabetes.

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'Spectacular' Results

Cerium Ointment Seen Preventing Burn Infections

Medical Tribune Report

SAN ANTONIO—Cerium nitrate has a significant bacteriostatic effect on major burn wounds, a Missouri investigator reported here. A 2.2% concentration of the compound mixed into a silver sulfadiazine cream was particularly effective against gram negative bacteria, including Pseudomonas aeruginosa, in a study by Dr. William Monafo, of St. Louis Mercy Medical Center, St. Louis. Pseudomonas, he reported, was found in less than 10% of cultures.

"Reviewing our past ten-year period

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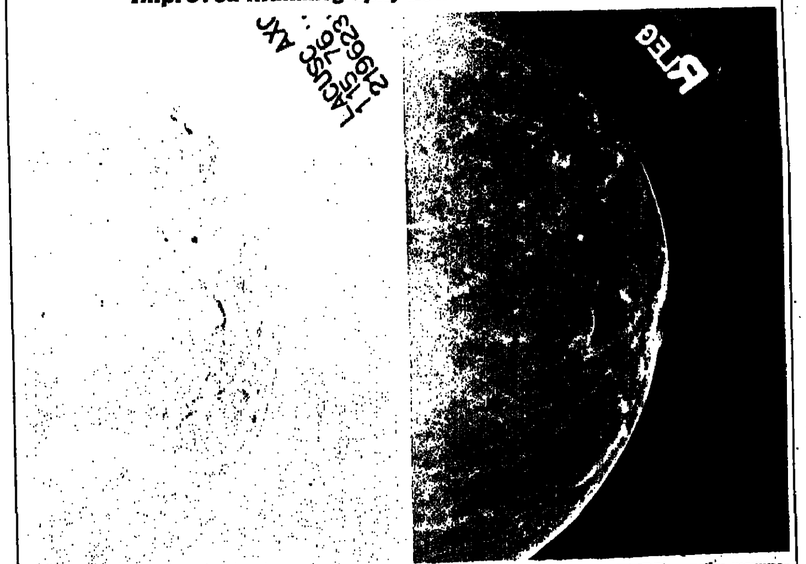
Improved Mammography Lowers Radiation Dose



Above mammograms of the same patient show comparable diagnostic quality but at greatly different radiation dosage per exposure. At left, Xeromammogram positive was taken at approximately 900 mR. The corresponding Xonics Electron Radiography System (XERG) negative mammogram was made at patient exposure of 50 mR. Clinical studies of the XERG process are underway at Los Angeles County-USC Medical Center. **See story on page 5.**

BCG Therapy Successful in Early Lung Ca

By JOHN HENAHAN
Special Tribune Correspondent

LOS ANGELES—The reportedly successful use of the immunotherapeutic agent BCG in the treatment of 24 patients with Stage I lung cancer was greeted by one scientist as "a milestone in lung cancer therapy" at the 56th annual meeting of the American Association for Thoracic Surgery held here.

Only one of the 25 Stage I lung cancer patients who received a single dose of BCG interpleurally after surgery showed a recurrence of the disease over a median 12-month span as compared to nine recurrences and nine deaths in a group of 25 lung cancer patients who did not receive BCG. No deaths were observed in the BCG-treated Stage I lung cancer patients, said Dr. Martin F. McKneally, of the Albany Medical College, Albany, N.Y.

In the same trial, patients with Stage II and Stage III lung cancer appeared to receive no appreciable benefit from BCG therapy, he added, suggesting that the heavy tumor burden, along with a breakdown of immune defenses, may outstrip the ability of BCG to protect more advanced lung cancer patients from the inroads of the disease.

Each of the patients in the study group received an interpleural injection of 10 million BCG organisms via a chest tube after surgery. The BCG the

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'Liquid Membrane' May Counter Overdose

By MICHAEL HERRING
Medical Tribune Staff

NEW YORK—A "milkshake" of "liquid membrane" capsules may one day be all that is needed to save the lives of thousands of children each year who overdose on aspirin and other drugs for today, according to scientists at the American Chemical Society meeting here.

Liquid membranes—made by encapsulating one solution within another by means of "surfactant molecules that hold the liquid film in place"—may also eventually be used to treat drug overdoses of all kinds, remove blood toxins in chronic uremia, oxygenate blood, control drug release, and remove heavy metals from waste water, according to Norman N. Li, Ph.D.

Dr. Li, a research scientist at Exxon Research Engineering Company who discovered liquid membranes "by chance laboratory observation" in 1966, explained how they work, using water and oil as a model. The surfactant molecules, he said, have a hydrophilic head and a hydrophobic tail and serve "as nails" to stabilize the membrane.

Making the Membranes

"To make a liquid membrane, you dissolve the surfactant into the water phase, then cover a droplet of oil with the water film. Then you add another phase, the external or continuous phase, so you end up with the oil droplet, water film and an oil phase on the outside."

To achieve more surface area, Dr. Li and others have made liquid membranes of micron size, and these are clumped in globules or aggregates of tiny liquid membrane capsules (LMC), he said.

John W. Frankenfeld, Ph.D., a senior research scientist at Exxon, said the liquid capsules have already shown "considerable potential" for removing toxins from gut fluid. "We have removed 95% of aspirin and phenobarbital from in vitro gut-fluid suspensions in less than five minutes," he reported.

In this case, sodium hydroxide is encapsulated in an oil membrane and suspended in gut fluid containing the highly acidic drugs, he said. As the drugs permeate the oil film, they are ionized by the NaOH and are no longer oil soluble, but trapped by the membrane. "Since intestinal absorption is considerably slower, LMC treatment within an hour or two of drug ingestion should be quite effective."

The trapped ions, he said, would be eliminated in the stool, and patients would not have to endure the uncertain sequelae of current emergency measures. "Drugs do not have to be oil soluble," he also noted. "We can put reagents in the film [e.g., plasma proteins, drug antibodies, activated charcoal, etc.] that will dissolve non-oil-soluble and even ionized materials." Animal studies are next, he said, with clinical trials in man about two years off.

Tested in Uremia

The use of LMCs as an adjunct to dialysis in chronic uremia is already being tested in animals, according to William Asher, also of Exxon, and his physician colleagues at the University of Pennsylvania. "The frequency of required dialyses . . . might be reduced if the program is successful," Mr. Asher told the press.

"The approach is to transfer the tox-

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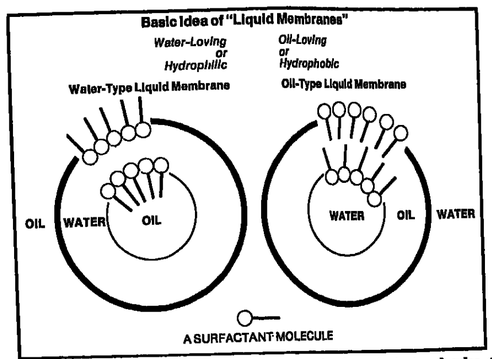

Liquid membranes, above l. and r., are held together by surfactant molecules, top of diagram. The molecule, with affinity for water at one end and oil at the other, acts as a staple to encapsulate oil within water film, or vice versa. Other liquids may be used, and capsules of micron size are possible.

New Heroin Addicts Held More Treatment Resistant Than Oldtimers

By NATHAN HORWITZ
Medical Tribune Staff

PHILADELPHIA—A new type of heroin addict, more resistant to treatment than earlier drug abusers, is entering "the competitive market for addiction" in Philadelphia, a major study reports.

The changing drug picture in 1974-1975 shows the new addict is more depressed, starts with heroin as his first drug of addiction, has been in previous treatment, has a longer arrest record, and more often comes from a family in which one or both parents are dead.

These findings were highlights of the fourth successive survey of Philadelphia drug addicts detailed here by Dr. Jacob Schut, director of the Drug Abuse Rehabilitation Program of the West Philadelphia Mental Health Consortium.

The new patterns of drug addiction emerged in a sampling of 1,545 consecutive first admissions to the consortium's methadone maintenance program, Dr. Schut told the American College of Physicians.

Contrary to earlier optimistic forecasts by some authorities, based on a decline in addicts seeking treatment in 1973, Dr. Schut noted, that 1974 and 1975 were characterized by a steady increase in the number of addicts seeking admission [to the treatment programs].

Fewer of the admissions in the early seventies, Dr. Schut reported, had been in treatment compared to those in the 1973-1975 admissions. One explanation for that, he said, may be the fact that Philadelphia's Central Medical Intake now assigns addicts to a methadone program only when other types of treatment have failed, but this is counter-balanced by the existence of a variety of drug treatment programs currently available to addicts.

"It is well known that addicts 'shop' around for programs," the investigator said, "and there is a high incidence of readmissions, approximately 25% for this methadone program."

More Depressed

Thus a "more therapeutically resistant type of heroin addict seems to have emerged in 1974 and 1975, as opposed to the earlier seventies," he continued.

"This type of male addict comes from a family in which one or both parents were dead [during the addict's childhood], used heroin as his first drug of addiction and had been arrested often.' He added: "Psychological and clinical data seem to indicate that our present addicts are more depressed, with more overt symptoms than earlier patients."

Another new finding, Dr. Schut disclosed, is a shift in the addict's primary source of income, away from welfare funds and unemployment checks, suggesting that families are now supporting the patients.

"The earlier admissions had described themselves as more dependent on public support than the latter two years' admissions. This finding was puzzling, since the rate of unemployment had remained high and was consistent over the six years," declared Dr. Schut. "A turning towards family members for support seemed to have accounted for the 1974 and 1975 shift; the increased incidence in the number of dead parents reported for admissions in these years meant that spouses and other relatives were paying for the addicts' support."

One of the unexplained observations, he noted, was that in contrast with 1972-1974, which showed an increase in female addicts, the number of female admissions last year dropped to the lower rate of 1970.

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CLINICAL NEWS NOTE: *"Current clinical and experimental data clearly demonstrate that optimal regulation of glucose levels should be achieved in the treatment of diabetes, particularly in young and middle-aged individuals who are at greatest risk of developing microvascular complications."* (From official policy statement of the American Diabetes Assn. See page 1.)

feature index

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Pediatric Progress

...brief summaries of editorials or comments in current medical and scientific journals.

All Your Brains

"...one is born with all the brains he or she will ever have. In general, the reproductive capacity of cells or tissues is inversely related to their degree of specialization. Thus the squamous epithelial cells of the skin reproduce throughout life, though more slowly in old age, and an abrasion, when these cells are rubbed off, causes no concern. The skin will grow back. Cancer cells, having no function whatever, eventually kill, by doing nothing but reproducing.

"On the other hand, the cells of the central nervous system, the most highly specialized in the body, have no reproductive power. Hence a brain cell lost at anytime after birth is lost forever. Therefore, be careful about head injuries...

"The present message, however, is directed to the fact that the brain at birth is cellulary complete and is, therefore, our most precious heritage. Throughout fetal life it must be fed a healthy circulation and carefully nourished during early childhood. These facts should provide a strong motivation for affording our children the best of prenatal and postnatal care and establishing dietary habits which will be maintained through life." (From *"Cobb's Column," W. Montagne Cobb, M.D. J. Natl. Med. Assn. 68:1, Jan., 1976)*

Streptococcal Pharyngitis

"...optimal parenteral treatment of streptococcal pharyngitis in patients in the pediatric age group is probably best achieved by a single injection of 900,000 units of penicillin G benzathine and 300,000 units of penicillin G procaine. Although the procaine component does not hasten the resolution of signs and symptoms, when compared to the benzathine component alone, it does clear the throat of streptococci more rapidly and greatly decreases the incidence of severity of untoward reaction about the injection site. This preparation effects a cure rate equal to that of 1.2 million units of penicillin G benzathine alone and is significantly superior to that achieved with 600,000 units of the drug alone. This preparation fulfills the recommendation of the American Heart Association for the treatment of streptococcal pharyngitis in children and for the prevention of rheumatic fever." *(James W. Bass, M.D., et al, JAMA 235:1112, Mar. 15, 1976)*

Electric Pain Relief

Medical Tribune World Service

ERNAKULAM, INDIA—Application of a 100-microampere electric current to the skin can relieve pain associated with lumbago, spondylitis, periarthritis, osteoarthritis and other conditions, according to Dr. Mathew George, orthopedic surgeon at Ernakulam General Hospital here.

Radiation Dose Lowered in Mammography

By FRANCES GOODNIGHT
Medical Tribune Staff

NEW YORK—Improvements in mammography techniques are now making it possible to screen for breast cancer with a radiation skin dose of 300 millirads (mR) or less, investigators reported here at the Third International Symposium on Detection and Prevention of Cancer.

Such dosage amounts to only a "small fraction" of the 1,000 to 4,000 or more mR produced by methods considered optimum just a short time ago, according to Dr. Philip Strax, medical director of New York's Guttman Institute.

Dr. Strax and other speakers at the symposium commented on recent publicity given to the possible ionizing radiation hazards of mammography, and expressed their belief that technological changes are greatly lessening potential risk.

"We must conclude," Dr. Strax said, "that there are now available mammography techniques that produce high quality films with minute mR doses that should allay all anxiety from repeated periodic mammograms as used in mass screening of apparently well women over the age of 35."

Rare Earth Screens

The introduction of rare earth screens is credited by Dr. Strax with facilitating the production of mammograms with "excellent resolution and contrast" at a low skin dose of radiation.

"In our hands, the use of an experimental Alpha type screen (made by the 3 M Company) with a matched green-sensitive double emulsion film has enabled us to reduce the dose to .2 to .3 R without any sacrifice of film quality perceptible to us," he said.

Investigators at the Guttman Institute are developing a device to permit automated screening with any screen-film system, at a resultant reduction in labor costs and film expenses.

Dr. Strax called mammography "of paramount importance" in the detection of early, localized breast cancer, and noted that 17% of the breast cancers detected at the institute in the years 1971-1974 would not have been found if this screening procedure had been omitted.

He emphasized, however, that palpation is the most important method, adding that its success is "directly related to the expertise of the one who palpates." Instruction in breast self-examination—given to all women screened at the institute—is essential for detection of "interval" cancer, he said.

What about thermography? In Dr. Strax's opinion, this should be used as part of the tandem approach to screening along with the interview, palpation and physical examination, and mammography. But its value lies in alerting the screening staff to the possibility of trouble, he said, since thermography does not detect or localize tumors.

New System

► Another development in mammography resulting in low radiation dose was described at the symposium by investigators from the Los Angeles County-University of Southern California Medical Center.

The new system, called Xonics Electron Radiography, produces electrostatic images on a polyester sheet or receptor. Conventional x-ray film is not used and darkroom development is not necessary. The basic steps are generation of the latent electrostatic image in an imaging chamber, development of this latent image by an electrophoretic process into a visible image, and then the fixing of the image to yield a radiogram that can withstand normal handling.

Preliminary clinical trials with the process indicate that it can produce high-resolution, high-latitude mammograms at exposures to the patient of 50 to 80 mR, according to the Los Angeles team.

Authors of the report included Philip Muntz, Ph.D., and Drs. Evelyn Wilkinson and George Jacobson.

Improved Detection

► The probability that better mammography techniques are leading to an increase in the number of cancers detected by such screening was suggested by Dr. William Pomerance, of the National Cancer Institute.

Dr. Pomerance evaluated results obtained so far from the 27 U.S. centers established as Breast Cancer Detection Demonstration Projects under the joint sponsorship of the American Cancer Society, the NCI, and the National Institutes of Health.

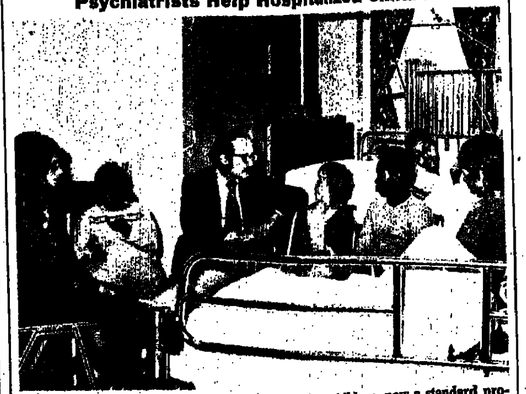
Summing up data on the efficiency of screening, he said it now appears that:

- The combination of mammography and physical examination detects 90% of extant breast cancer.
- Over 40% of that 90% are detected by mammography alone, with negative physical findings.
- Approximately three-fourths of the same 90% are free of axillary nodal involvement; and
- It is probable that more than three-fourths of cancers detected by mammography alone are free of involved nodes.

Dr. Pomerance noted that the percentage of cancers detected by mammography alone in the project centers is higher than the 33% figure reported in the mass screening study begun in 1963 by the Health Insurance Plan of Greater New York. Such an increase "is probably due to the considerable improvement in mammographic technique and interpretation that has occurred in the interim," he said.

Citing the reductions in radiation dosage already achieved, Dr. Pomerance expressed the hope that effective mammography screening can be performed with radiation skin doses below 150 mR per exposure. The potential of ultrasound for detection must continue to be investigated, he said, but at the present time "the combination of physical examination and mammography is an effective screen for the detection of early breast cancer."

Psychiatrists Help Hospitalized Children



Sitting in on a discussion group for hospitalized children, now a standard procedure at Beth Israel Medical Center in New York, are Dr. Yehuda Nir, left, assistant chief of child psychiatry and Dr. Dorcas Cofer, right. Isolated pediatric patients develop fears, anxieties and depression that may last for years. Pilot study showed that participants in group discussions take home fewer emotional scars after expressing their feelings in a therapeutic atmosphere.

Skin Cells Grown

Medical Tribune Report

CAMBRIDGE, MASS.—Human skin cells—previously resistant to attempts to grow them in the laboratory—can now be easily cultivated, using a technique developed by biologists here at the Massachusetts Institute of Technology.

The biologists, Professor Howard Green and former graduate student James G. Rheinwald (now a postdoctoral fellow) say that the technique, which includes culturing with irradiated fibroblasts, could be useful both in basic research and in medical research.

For example, skin cells grown in the laboratory could be used to study the effects of viruses such as the wart virus, to study the behavior of skin cells involved in diseases, and to test drugs.

It may also be possible to grow large quantities of a patient's skin to be used in skin grafts.

Alcoholism Termed Soviet's 'Real Ideology'

By MICHAEL HERRING
Medical Tribune Staff

NEW YORK—There are now twice as many alcoholics in the Soviet Union as in the U.S., due in part to an astounding 500% increase in alcohol consumption since 1950, Dr. Boris Segal, former chief of a Soviet alcoholism program, said here.

"It is possible to say that it is not communism but rather drinking which is the real ideology of contemporary Soviet society," he recently told a meeting of the National Council on Alcoholism at New York University Medical Center.

In Russia, he said, the medical problems of dealing with alcoholism are compounded by strict censorship of findings and the lingering persuasion of many officials that alcoholism is the "remnant of capitalism."

Dr. Segal, who is now research scientist at Harvard University's Russian Research Center, said much of his data was taken from studies he made in the Soviet Union from 1965 to 1972, only part of which were ever published.

"In the area of medical care, the main problem in both countries remains the insufficient number of qualified medical personnel, the insufficient intercommunication between medical, governmental, social, and educational institutions, and also the limited funds devoted to research and the search for new, effective methods of treatment," Dr. Segal said.

He also told the conference that:

- Between 1950 and 1973, US alcohol consumption rose 90%, while consumption in the U.S.S.R. soared 500%; both countries are among the world's ten heaviest consumers of alcohol.
- Soviets consume twice as much distilled spirits as Americans and the number of alcoholics is estimated at 18 million, twice as many as in America.
- Alcoholism in the U.S. causes about 50% of all fatal highway accidents, and 50% to 75% of all fatal accidents in the U.S.S.R.
- Drinking is heaviest among Soviet blue-collar workers and among the Irish and ghetto blacks here; the proportion of female to male alcoholics is higher in America.
- Urbanization, permissiveness, family disintegration, adolescent socialization, and feelings of victimization by society are common social causes for alcoholism in both countries.
- The growth of drinking in Russia is associated with economic depression and "the suppression of the personality, private initiative, and spiritual freedom."

In both countries, Dr. Segal said, measures to prevent alcoholism are inadequate. While antisocial drinking behavior is frowned upon more often in the Soviet media and in society, both governments have an active interest in the sale of alcohol, making preventive measures inconsistent and ineffective.

Both countries have insufficient youth programs and too few treatment modalities, though the multidisciplinary approach gets much lip service, he said.

Respiratory Aid Improves Survival of High Risk Infants

By JULIAN DEVRIES
Special Tribune Correspondent

PHOENIX—Intermittent mandatory respiration is improving the survival rate of high risk, low birth weight infants, Dr. John S. McDonald, Assistant Professor of Obstetrics and Gynecology at Los Angeles County-University of Southern California Medical Center, reported here.

While early obstetric care, careful obstetric management and improved neonatal care have played important roles in the reduction of neonatal mortality, the introduction of new aspects of respiratory care has greatly enhanced the physician's ability to maintain viable support for small, high risk infants, he told the 50th Congress of the International Anesthesia Research Society here.

"We are impressed," Dr. McDonald said, "that the institution of more intense respirator management for support of both ventilation and oxygenation problems has significantly improved survival in the 1,000-2,000 g neonates."

First step in establishing respiratory assistance for the low birth weight neonate, he said, is to determine baseline blood gas volumes via an umbilical artery catheter. If the initial values show either a primary oxygenation or ventilation problem, or both, which were not relieved by nontracheal tube management, or if it is immediately apparent that tube management is indicated, a No. 2.5-4.0 mm uniform diameter endotracheal tube is inserted orally following pre-oxygenation and mask and bag ventilation. Accurate tube placement is confirmed by X-ray. The catheter tip, Dr. McDonald said, should lie above the carina.

Following intubation, the infant is placed in a Baby Bird or Bourns ventilator. When this no longer is required the infant is managed with supplemental oxygen or continuous positive airway pressure (CPAP) or both, as needed until extubation becomes possible.

Preliminary Review

A preliminary review of the modality's statistics for 1975, Dr. McDonald said, reveal that survival rates in the less than 1,500 g neonate and the less than 2,000 g infant may be as high as 59% and 69% respectively.

Dr. McDonald's preliminary 1975 figures indicate a considerable improvement over his statistics covering the period from July 1973 to June 1974. During that year, he said, of 27 hospital admissions of 1,000 g or less neonates given intermittent mandatory respiration, 11 survived and 16 died, giving a survival rate of 41%.

High risk, low birth weight infants are placed on a Baby Bird (pictured) or Bourns ventilator as part of Dr. McDonald's improved modality of management.

Of 63 neonates in the 1,500 g or under category, Dr. McDonald's figures show, there were 31 survivors with 32 deaths for a survival rate of 49%.

Among 44 neonates weighing 2,000 g or less, 19 lived and 21 died, for a survival rate of 43%.

However, among 82 neonates whose birth weight was 2,000 g, or more, 66 survived and only 16 died, giving a survival rate of 80%.

"The original concept of a high risk infant," McDonald said, "was simply the premature, originally described in 1919. While the original criterion of 2,500 g was useful as a division between 'maturity' and 'prematurity' and allowed early useful comparative data, it also revealed the need for a special consideration for a heretofore unrecognized phenomenon—the small for date neonate.

"In addition, important steps have been made in the cognizance of the two involved specialties, obstetrics and pediatrics, that perinatal mortality can be substantially reduced by close communication and co-ordination of high risk pregnancies and the institution of supportive life maintenance systems for the high risk neonate.

"Thus, in our particular setting, it would appear that such management has substantially enhanced neonatal survival in this high risk population. To what degree is, of course, unknown since many other improved modalities of management were instituted around the same time."

Erythromycin in Serum Higher If Given After Meals

By HARRIET PAGE
Special Tribune Correspondent

SEATTLE, WASH.—Bioavailability studies with sick children given erythromycin succinate indicate that they handle it pretty much as adults do, attaining higher serum levels when the drug is given after a meal than after fasting.

Dr. Terrance C. Coyne, who described the study here to the American Society for Clinical Pharmacology and Therapeutics, said this does not mean that the drug is therapeutically inadequate when given on an empty stomach, since experience and published data support its efficacy given that way.

But, said Dr. Coyne, who is associate director of clinical research for Abbott Laboratories in North Chicago, Ill., the study does seem to show that dosage extrapolation from the adult dose based on weight "is appropriate, and does result in adequate serum levels in children."

Dr. Coyne told MEDICAL TRIBUNE that the study demonstrates that bioavailability studies in children are possible, and do yield valuable data, even though a crossover design cannot be followed that would reduces subject-to-subject variation. And while results cannot be quantitatively compared to studies with healthy volunteers, valid similarities can be seen.

The investigator noted that because of ethical considerations, most, if not all, bioavailability data is obtained from normal healthy adult subjects. "As a result, bioavailability information in the young pediatric population is rarely available, thus regulatory agencies and clinicians have limited data on which to base an objective decision for determining appropriate and effective dosage or approving usage in the very young age groups. Typically, the pediatric dose is extrapolated from the adult dose on either an age or weight basis," Dr. Coyne said.

The study group consisted of 27 children, aged six months to six years, who required antibiotic therapy for an infection that would be treatable with erythromycin. They were admitted to the hospital and randomly assigned to one of the two groups.

The 13 patients assigned to the other group received the same meal at the end of the fast. A half-hour later a zero-time blood sample was drawn, followed by drug administration.

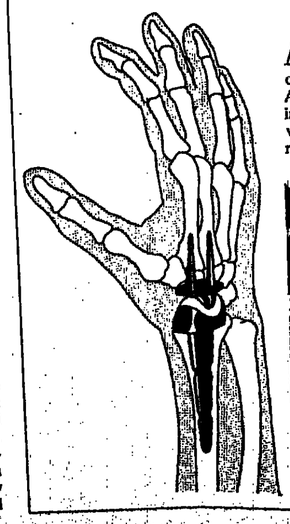
The drug was given to all patients, Dr. Coyne said, on approximately a 40 to 50 mg/Kg/day basis, as recommended by the product label.

Mean serum levels of the patients in the fasting group peaked at 1.31 micrograms/ml one hour after dosing, Dr. Coyne said, while levels in the non-fasting group rose almost twice as high, to 2.60 micrograms/ml, one-and-a-half hours after dosing.

The same drug was given to 23 healthy adults in a single 400 mg oral dose under both fasting and non-fasting conditions, in a randomized two-way crossover design. As with the children, the non-fasting dose regimen in the adults produced higher levels than the fasting regimen.

Wrist Implant Restores Function

A NEW TYPE OF ARTIFICIAL WRIST JOINT, which permits palmar flexion and extension and radial-ulnar deviation, has been successfully implanted in over 20 patients, says orthopedic surgeon Robert G. Volz, of the University of Arizona Medical Center, Tucson. Made of plastic and metal, the device has two interfitting parts which permit motion in only two planes, as does the anatomical wrist. Unlike ball and socket joints, the new device does not allow unnatural rotation through the wrist.



Device is inserted (photo at far left) so that proximal end fits into radius and pronged metal end into second and third metacarpals. Knurled surfaces strengthen bone-cement interface. Implant in right wrist let organist (above, left) resume career cut short by fall. Woman (above, right), crippled by rheumatoid arthritis, can now open doors.

"Let me tell you about the medicine I'm going to prescribe."

TALKING OVER VALIUM®(diazepam) THERAPY WITH YOUR ANXIOUS PATIENT.

A patient often benefits by a greater understanding of his treatment program. You may find it helpful to make your patient aware that the purpose of therapy with Valium is to help reduce discomforting and disabling symptoms of excessive psychic tension and anxiety. It is beneficial for him to understand that much of his tension and anxiety can be relieved by your reassurance and counseling, and that these measures can do more than anything else to help him cope with his basic problems. The patient is reassured in knowing he can expect his medication to help him avoid feeling overwhelmed by his symptoms. And it's also good for him to realize that he will be taking Valium only as long as he needs it.

Your expressed confidence in the medication prescribed, and the positive atmosphere in which therapy is given and accepted, work to the patient's advantage.

Selection of a dosage regimen is an important consideration when Valium (diazepam) is prescribed, and dosage should be individualized to achieve maximum beneficial effect. If the patient understands clearly when and how much to take, and if he knows why it's to his benefit to follow the regimen closely, the chances are better that he will take the medication precisely as directed. That should help avoid missed doses and discourage taking too much or too little medication—all of which can have an undesirable effect on the management of the patient's condition.

"It's important that you follow my directions closely."

"I'll see you again the week after next and we'll see how you're making out."

Your patient is often likely to feel reassured when you talk about seeing him again to check his progress. A planned visit evidences your continued interest and affords the patient an opportunity to report improvement he has made and to relate whatever continuing or additional difficulties he may be experiencing. It's also a chance for him to describe his response to therapy with Valium.

During follow-up visits, as your patient talks about his medication and about its effects on his symptoms, he will provide the kind of information that will be of great help in evaluating total therapy, adjusting the dosage of Valium, or discontinuing the medication entirely if that seems indicated.

Valium® (diazepam) Ⓝ

2-mg, 5-mg, 10-mg scored tablets

for individualized treatment of psychic tension

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Please see the following page for a summary of product information.

The Only Independent Weekly Medical Newspaper in the U.S.

Medical Tribune

and Medical News
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The Bad News

A Sad Day for American Inventiveness and Ingenuity

WITH THE INEVITABILITY of a Greek tragedy, the United States is moving towards legislation which will establish wide ranging government control over medical devices. What is intended as enlightened legislation may be a mixed blessing. The new devices bill is being sponsored, among others, by Congressman Paul Rogers who for so long has been a balanced and effective spokesman in Congress for positive aspects of health care. There is no doubt that Congressman Rogers is reacting to a number of serious abuses in the area of devices—in poor design and poor manufacturing practices. We are concerned as to how many babies are being thrown out with the dirty bath water.

Regulations do exist to control fraudulent devices and there are ways other than proliferating extensive legislation to control defective design and bad manufacturing practices, and to do so without eviscerating the guts of what made America the leader in the field of medical devices. We have been informed by knowledgeable physicians that **"At present, the Food and Drug Administration exerts control over the medical device industry through the Bureau of Medical Devices and Diagnostic Products, which already employs over 200 people. The existing Food, Drug and Cosmetic Act empowers the Agency to regulate any medical device that is unadulterated or misbranded. The actions available to the Agency for violations of that law include seizure, injunction, criminal prosecution and imprisonment of persons responsible.**

The medical device industry is also forcefully and effectively regulated by the medical liability climate in this country."*

Many specialists in this field are fearful of bureaucratic red tape. They believe that if the procedures currently applicable to drugs had been applicable to devices, many, if not most, that are currently considered among the miracles of modern medicine could have died aborning or delivered only after tragic and unnecessarily long development. Could valve prostheses ever have come to fulfillment and, if so, with how many years of delay under the prospective new government regulations? They further believe it is not beyond the realm of possibility that as much as $1 billion may be added annually to the cost of medical care in this country by this measure.

And to say, the day when the brilliant, independent young medical device inventor and innovator could carry his creation through from concept to wide clinical use may be gone. Yet such individuals pioneered the field and gave the impetus to American leadership in the development of medical devices. The flood of regulations and the inevitable bureaucratic time and money-consuming red tape that will ensue can only be coped with and the costs met by a few very large, financially powerful organizations.

It is a sad day for the individual American pioneer with inventiveness and ingenuity and initiative in the field of medical devices.

"You were racing the man in Room 207 again and hit the wall. ...Stop saying you hit a pothole." *©1976, Medical Tribune, Inc.*

be applicable in their countries. Other countries will not be forced to accept American imposed "standards" without relevance to local situations or in the face of different but valid points of view from their own experts. The export of American devices can be undertaken as long as they are not fraudulent, neither adulterated nor misbranded, and meet the standards or legal specifications of the countries which desire to acquire them.

These aspects of the devices bill are encouraging signs that Congress can legislate "with its feet on the ground," that the scientific community, if it properly states a valid position, may still be heard and responded to by responsible legislators. One can only hope that those positive precedents which have been set in our device legislation may also be applied to drugs—in the interests of research, patients and the public health. A.M.S.

*Quotation from letter to A.M.S. from Shirley R. Andersen, M.D., H. W. Andersen Products, Inc., 45 East Main St., Oyster Bay, N.Y. 11771. Jan. 31, 1976.

. . . And the Good News

A Few Signs that a Modicum of Good Sense May Prevail

FROM A POSITIVE ASPECT, as the device legislation proceeded through Congress, a number of important safeguards for research and progress were built into the legislation. While individual inventors may not be able to carry their devices from creation through to the marketplace, there will be fewer of the maddening restrictions which exist in respect to drug research. Clinical investigators seeking to study new devices will not be forced through the laborious approval of protocols by an already overloaded Washington bureaucracy. Responsible researchers will be able to carry on clinical investigations with device research protocols approved by their institutional or local hospital committees.

As to "informed consent," the House version introduced a tiny modicum of flexibility, avoiding the "setting into concrete" of a mass of requirements of questionable value. "Informed consent" has been propagandized and converted into "code words" that have become the proprietary slogans of some strident, self-appointed crusaders. As clear as it is that "informed consent" constitutes a valid and vital area of ethical and moral, social and scientific concern, it is equally evident that its senseless and insensitive application "across the board" by legislative or regulatory mandate can frighten patients from needed life-saving measures and "protect" much pathology from corrective, scientific intervention.

Furthermore, patients abroad will not be kept from the fruits of American medical device research by regulations which, regardless of whether they make sense or nonsense here, may not

LETTERS TO TRIBUNE

Thermography's Usefulness

MEDICAL TRIBUNE (Feb. 25) published an article stating thermography is not reliable in screening for breast cancer, citing two different studies, one from the program for cancer detection in centers in Milwaukee and another from Jefferson University in Philadelphia. In both studies, thermography has been given a very low grade of accuracy.

It is our experience that thermography deserves a better place in breast screening. We have been doing thermography for over a year and one-half. This is combined with physical examination, and selective mammography in cases of abnormal thermograms.

In 1500 consecutive cases of gynecological patients over the age of 35, we have been able to detect 12 cases, five of them were occult cancer. In all the 12 patients with cancer, only one had a false negative thermogram and this was Paget's disease of the nipple. In this particular case, the surgeon did not perform a mammogram and biopsy was done on a physical finding. This was the only case in which a mammogram was not done. In all the other cases, a mammogram was done. In one case which the thermogram was reported as abnormal, the physical examination was reported abnormal and the mammograms on two different occasions were reported normal. This patient had advanced carcinoma and 15 out of 18 lymph nodes were positive.

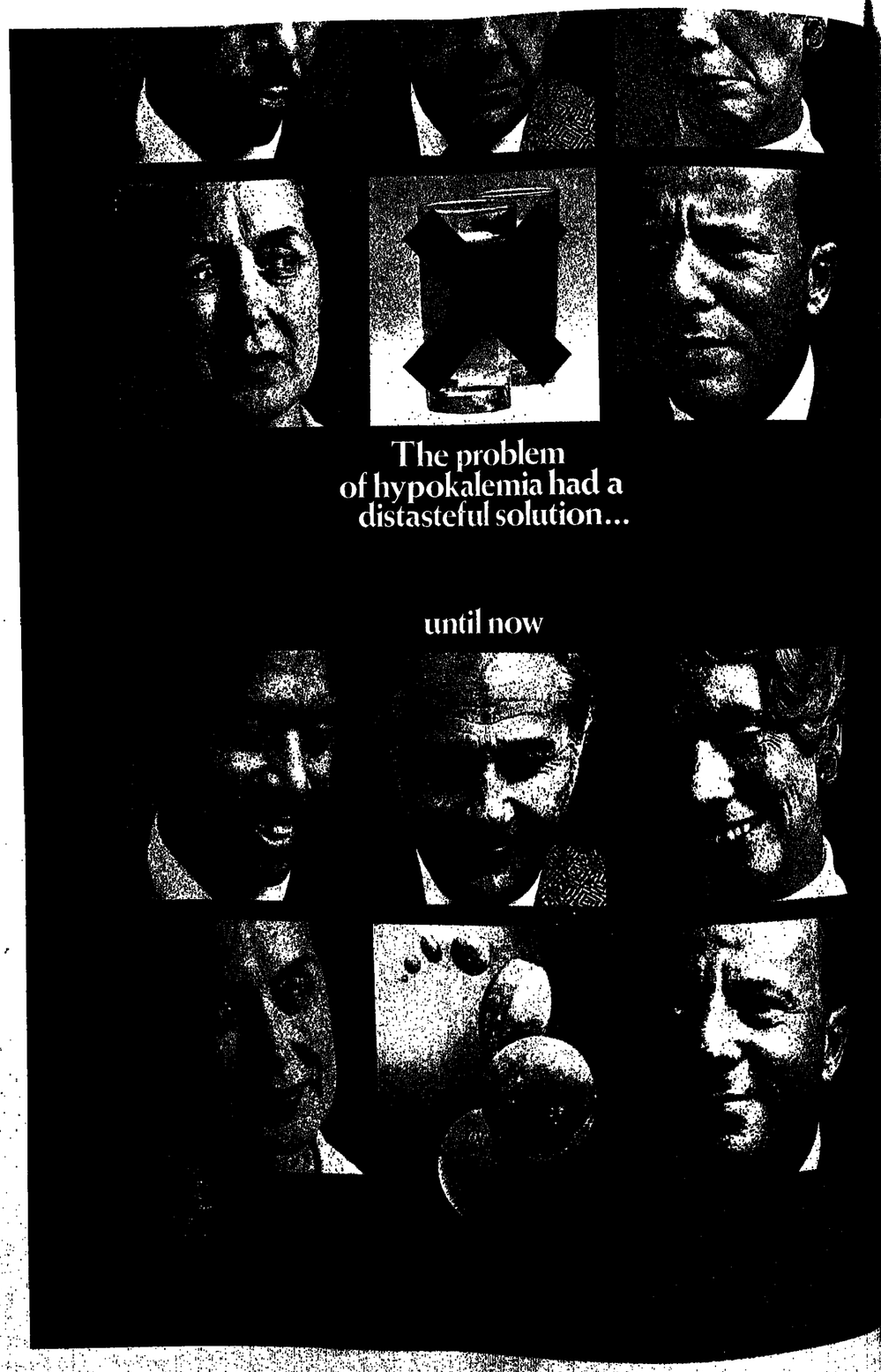
Our protocol is to examine the patients and do a thermogram. If the thermogram is reported abnormal, the patient is submitted to a mammogram. The patient is sent to a surgeon only if the mammogram or the physical examination is abnormal. If only the thermogram is abnormal no biopsy is done, but the patient is re-examined more frequently.

Our results show that 23.3% have a "false positive" thermogram, Mammograms have been done in these cases. Only 19% of the mammograms were reported normal. The rest, or 81% of the mammograms done on the "false positive" basis, were reported to have various non-malignant breast diseases.

In our screening program, 47 patients out of 1500 underwent breast biopsies. Of them, 26% have proven to be cancer, with five being occult cancer. In our hospital, when thermography and mammography were not done before biopsy, only 10% of those patients submitted to breast biopsies had malignancies.

Since our first 1500 cases, we have found another occult cancer. Several other patients are pending biopsies of the breast at present. Our patients come from the private practice of two gynecologists, with a few referrals from other doctors in the area.

RAMON L. AMOR, M.D.
W. JAMES BAGGS, M.D.
Newport News, Va.

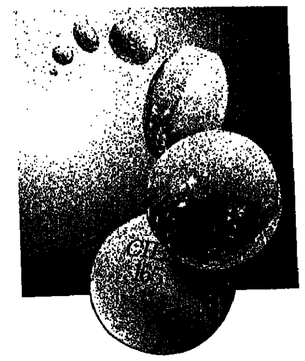


The problem of hypokalemia had a distasteful solution...

until now

matrix with a mission

...for the treatment of hypokalemia
...for the prevention of hypokalemia when dietary intake of K is inadequate



Slow-K®
(potassium chloride) slow-release tablets 8 mEq

The mission: to deliver K patients can take

The Slow-K wax matrix is intended to provide a controlled release of potassium to minimize the likelihood of high local concentrations of potassium within the gastrointestinal tract.

Comparison studies[1-3] show Slow-K to be far more palatable and convenient than liquid KCl. Further, Slow-K caused much less nausea, heartburn and diarrhea (occurrence of abdominal cramping was comparable). Also, no evidence of GI bleeding was detected when Slow-K was administered daily for 14 days to 30 male volunteers.[4]

The mission: to deliver K patients will take

The problem of patient compliance posed by the unpleasant taste and aftertaste of liquid potassium supplements is not a factor one need be concerned with when prescribing sugar-coated Slow-K tablets. For when compared to liquid KCl preparations[1-3] or to a potassium gluconate elixir,[1,5] Slow-K proved far more palatable—as well as more convenient and more acceptable—to the great majority of patients.

The chloride anion

Slow-K provides the chloride anion which, combined with K+, is essential for restoring normal acid-base and potassium balance in patients with hypokalemic alkalosis.[6]

Dependable potassium supplementation

Slow-K maintained normal serum K levels as effectively as liquid KCl preparations[2,3] and as a potassium gluconate elixir,[5] according to open-label crossover studies.[2,3,5]

And Slow-K has over 10 years' worldwide clinical experience, with over 4 billion tablets dispensed.*

*Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and duodenum. Similar lesions have also been reported with liquid K supplements. A few cases associated with wax-matrix tablets have also been reported. The frequency of these lesions, however, is much less with wax-matrix tablets (fewer than 1 per 100,000 patient-years) than with enteric-coated KCl tablets (40-50 per 100,000 patient-years). Note: Solid forms of K supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the GI tract.

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Slow-K®
(potassium chloride)

INDICATIONS
For treatment of potassium depletion in patients with hypokalemia and metabolic alkalosis, and for treatment of digitalis intoxication. During therapy serum potassium levels should be monitored and dosage titrated to achieve desired clinical and laboratory effects.
For prevention of potassium depletion when dietary intake of potassium is inadequate. Prophylactic administration of potassium ion may be indicated in patients receiving digitalis and diuretics for treatment of congestive heart failure, hepatic cirrhosis with ascites, patients with chronic renal disease on long-term diuretic therapy, hypokalemic nephropathy states with normal renal function, hypokalemic syndrome, and certain diarrheal states.

CONTRAINDICATIONS
In patients with hyperkalemia, since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (eg, spironolactone, triamterene).
Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.
All solid dosage forms of potassium supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the G.I. tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS
In patients with impaired mechanisms for excreting potassium, administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium intravenously but may also occur when given orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. Use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.
Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (eg, spironolactone or triamterene); since the simultaneous administration of these agents can produce severe hyperkalemia.

Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and duodenum. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage, or perforation. Slow-K is a wax-matrix tablet formulated to provide a controlled rate of release of potassium chloride and thus to minimize the possibility of a high local concentration of potassium ion near the bowel wall. While the reported frequency of small bowel lesions is much less with wax-matrix tablets than with enteric-coated potassium chloride tablets (40-50 per 100,000 patient-years), a few cases associated with wax-matrix tablets have been reported. These data are from foreign marketing experience. Slow-K should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.
Hyperkalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, or potassium acetate.

PRECAUTIONS
Potassium depletion is ordinarily diagnosed by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis *per se* can produce hypokalemia in the absence of a deficit in total body potassium, while acute acidosis *per se* can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium.
Treatment of potassium depletion, particularly in presence of cardiac disease, renal disease, or acidosis, requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, electrocardiogram, and clinical status of patient.

ADVERSE REACTIONS
Most common to oral potassium salts: nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by diluting the preparation further, taking the dose with meals, or reducing the dose.
Most severe adverse effects: hyperkalemia and gastrointestinal obstruction, bleeding, or perforation.

DOSAGE AND ADMINISTRATION
Usual dietary intake of potassium by the average adult is 40 to 80 mEq per day. Potassium depletion sufficient to cause hypokalemia usually requires loss of 200 or more mEq of potassium from the total body store.
Dosage must be adjusted to the individual needs of each patient but is typically in the range of 20 mEq per day for prevention of hypokalemia to 40-100 mEq per day or more for treatment of potassium depletion.

HOW SUPPLIED
Tablets (pale orange, sugar-coated), each containing 600 mg (8 mEq) potassium chloride; bottles of 100 and 1000.

Consult complete literature before prescribing.

CIBA Pharmaceutical Company
Division of CIBA-GEIGY Corporation
Summit, New Jersey 07901

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CIBA

Diabetes Assn. Says Principal Goal Of Therapy Is Blood Sugar Control

Continued from page 1

That evidence, the association said, now "places the burden of proof upon those who maintain that diabetes control is without effect."

"Current clinical and experimental data clearly demonstrate that optimal regulation of glucose levels should be achieved in the treatment of diabetes, particularly in young and middle-aged individuals who are at greatest risk of developing the microvascular complications," the ADA declared.

The statement was signed by Dr. George Cahill, Jr., ADA president and director of research at the Joslin Clinic; Dr. Donnell D. Etzwiler, President-Elect and Director of the Diabetes Educational Center, Minneapolis; and Dr. Norbert Freinkel, Vice President, ADA Professional Section, and Kettering Professor of Medicine, Northwestern University.

Dr. Cahill told MEDICAL TRIBUNE that the action was "unprecedented," but added that "somewhere, we felt, a position had to be taken" based on the best available evidence.

Better Correction Needed

In the statement, the ADA acknowledged that "current methods of therapy are only partly effective at best" and urged that "a high priority should be assigned to the development of more physiologic insulin delivery systems or to approaches to the correction of the deficient insulin-producing mechanism itself."

But in the absence of such optimal solutions, the organization observed, good diabetic management in the present state of knowledge suggests that what is "most important is a commitment to the view that better 'control,' when achievable, is beneficial."

Decreased Nephropathy

"For almost 50 years, since insulin therapy was initiated, proponents of 'rigid', 'tight', or 'chemical' control quoted retrospective evidence of decreased or delayed nephropathy or retinopathy as glucose levels are brought by therapy towards the normal range," the ADA said. "Opponents of this hypothesis pointed to the problems of complications in many of the supposedly better-controlled patients, to the emotional and socio-economic conflicts which often resulted from the demands of rigorous control, to the frequent difficulties with hypoglycemic reactions and, recently, to the University Group Diabetes Project."

The UGDP study, however, did not settle the controversy, the association noted, since the five forms of therapy employed "failed to demonstrate any effect upon microvascular lesions." The reason, the ADA said, was that "the middle-aged or older subjects studied exhibited only minimal initial hyperglycemia, and the reduction in blood glucose was small, so the results are not directly pertinent to the relationship between glucose levels and microvascular lesions."

A new picture began emerging, however, with a variety of recent studies that shifted the preponderance of evidence in favor of control. The ADA statement cited data from studies in a wide range of animals, including primates, showing that "reduction of hyperglycemia by insulin therapy, by transplantation of insulin-producing tissues, or by other means, prevents or minimizes formation of diabetic-like lesions in eye, kidney and nerve."

Hemoglobin Altered

Further, biochemical studies "have shown persistent hyperglycemia to be associated with accumulation of sorbitol in nerve, eye and vascular tissue and with alterations in vascular basement membrane," the statement continued. "Most recently, even hemoglobin has been found altered in man and experimental animals in the presence of persistent and prolonged hyperglycemia."

And, finally, the ADA said, "In a small but prospective study of randomly assigned patients, just reported from Paris, enthusiastically well-controlled diabetic subjects showed less retinopathy. Thus, the contention that the microvascular complications occur independently of the hyperglycemia and insulin deficiency and that control of the metabolic events is not a factor in their progress does not appear tenable any longer."

The ADA policy statement culminates some six months of behind-the-scenes discussion among the organization's scientific and lay leadership. But the impulse that prompted the discussion, an ADA spokesman said, goes back much earlier, to a proposal two years ago by Drs. Karl E. Sussman, of the University of Colorado, and Robert Metz, of the Mason Clinic, Seattle, who contended that the time had come for the ADA to develop minimal criteria for the treatment of juvenile and adult diabetes.

Dr. Cahill stressed, however, that before treatment criteria could be developed, a concept and philosophy of control had to be established. He therefore drafted last year a statement on control that was submitted for review to 28 investigators and clinicians and some lay leaders in three major ADA committees—the Committee for Research and Scientific Affairs, the Committee on Materials and Therapeutic Agents, and the Committee on Professional Activities.

It was Dr. Cahill's draft that formed the basis for the policy stand ultimately adopted by the ADA.

In the interview, he said the ADA's principal motive for preparing the policy statement was to "upgrade medical practice" by outlining what is believed to be the best available information on the subject of control.

"Some people feel that the issue has not been scientifically resolved," he commented. "But a controlled study of this nature is almost impossible to conduct. One has to agree, in a way, with those diabetologists who contend that the case for blood sugar control lacks truly hard scientific evidence."

Nevertheless, he said, "There is now sufficient data, including well-designed prospective studies, to suggest that the better you take care of the diabetic's blood sugar, the more beneficial the results."

Probing for Eye Tumors

New technique for detect suspected eye tumors, utilizing ultrasound-guided gamma-ray probe and scaler counts of radioactive tracers, is employed by ophthalmologist, Dr. Michael Wainstock, at University of Michigan Hospital.

Infrared Helps Control Burn Hypermetabolism

Medical Tribune Report

SAN ANTONIO—A unique but simple method for controlling hypermetabolism in patients with extensive burns was reported here by Dr. Gösta Arturson, director of the burn center at University Hospital, Uppsala, Sweden.

Dr. Arturson's patients control their own heat supply by turning on infrared heaters placed over the bed.

"Whether hypermetabolism is caused by the patient's being externally cold or internally warm is a continuing controversy among burn specialists," said Dr. Arturson. "But no hypermetabolism was found in burn patients when they controlled their own heat supply."

Burn specialists agree that the serious problem of heat loss in burn patients is a result of increased evaporation, radiation, and convection. There are several ways to reduce the loss but it has not been possible to lower the energy expenditure to a normal level for the patient's actual core temperature.

"The reason for this," said Dr. Arturson, "may be that the heat loss is so large that no treatment applied decreases the heat loss enough or transfers an adequate amount of heat to the patient for complete elimination of the hypermetabolism."

Advantages of infrared heaters include low expense, ambient air temperature can be kept normal, and decreased patient need for I.V. or oral caloric intake, Dr. Arturson said.

Tribune Economic Analysis

Market Turning In Favor of The Farmers?

BY ELIOT JANEWAY
Consulting Economist

An angry new confrontation is brewing between America's farmers and their customers. At the worst of the 1973 inflation fever rash, the food-consuming public staged a boycott against food prices. It worked. The farmers have been hurt, and they are waiting for the day when they can get their own back.

Despite Department of Agriculture propaganda threatening America's farmers with burial under mountains of new grain surpluses, they are sensing that the market is turning back in their favor. When it does, food prices will shoot up again.

The pressure for higher farm prices is rising along with the market prices for good farm land and the astronomic cost of investment in maximizing yields per acre. In fact, farm production now takes so much capital that it is sharing the need of industry for higher prices *and* higher production. Neither one will offset the other, as in the past.

The fusion of uneconomically high fuel prices and economically high food prices will quickly dispel the illusion that anything was done about inflation while America was appeasing the world oil cartel and shrugging off the distress of her farmers.

Ask Janeway

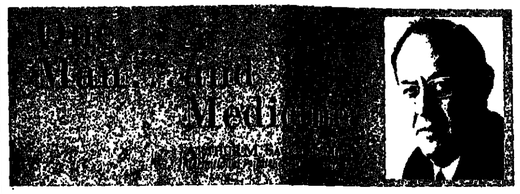
I'm a 41-year-old pharmacist in the 39% bracket. I have approximately $100,000 invested in mutual funds, common stocks, and bonds, including tax-exempts. I am particularly concerned about tax-deferred annuities. How safe are they? What is their cost-effectiveness relative to alternative investments?

Arizona Pharmacist

Safety is not the question to worry about with annuities. All the insurance companies selling them are safe. The question is whether they represent an economic use of money. As my handbook *You and Your Money* explains, they are bets on life expectancies. The buyers are paid back mainly in their own money. The only way they come out ahead is by living long enough to start getting a lifetime income from the insurance company. The argument against annuities is that they represent a high price to pay for lifetime security. But they do buy lifetime security.

It makes no sense for anyone in only a 39% tax bracket to sacrifice yield to buy a tax shelter or, for that matter, to own tax-exempts.

Send your questions on finances, investments, taxes to Janeway, MEDICAL TRIBUNE, 880 Third Avenue, New York, N.Y. 10022.



On the Canaanites and Fertility, Hieroglyphics and Dayan

WE HAD JUST finished looking over some far-eastern archaeologic material stored in the "bowels" of the Metropolitan and were relaxing over lunch.

"What do you consider the most interesting archaeologic area?"

"Canaanite," was the unhesitating reply of Moshe Dayan, formerly Chief of Staff of the Israeli Army and now a member of the Knesset. "For me, it is most fascinating, not in terms of the aesthetics of the material—most of it is very strong, almost brutal—but because of its enormous influence on all other civilizations."

The Phoenicians' Influence

Most of us learned in Genesis that the Patriarch Abram and Sarai, his wife, left "Ur of the Chaldees to go into the land of Canaan." In history we were taught that the Phoenicians (the biblical Canaanites) inhabited the seacoast of what is now Lebanon and Israel; that the legendary Phoenicians were mariners who built their ships of the famous cedars of Lebanon. Beginning in the first thousand years of recorded history, they extended their influence almost completely around the rim of the Mediterranean, reaching into northwest Africa and western Spain. The early Canaanite period corresponded with the early bronze age, 3,000 years before Christ. Their city states included Jerusalem and the fabled Jericho, whose walls fell to the trumpets of Joshua and the remains of which one can look down upon today in an excavation which has laid bare a small sector of its ramparts.

The role of the Phoenicians in trade was not limited to their maritime reach but also to the location of Canaan on the caravan routes to Egypt and Mesopotamia. Today, archaeology is clarifying the reciprocal influences between Phoenician and Egyptian and other mideastern cultures. Professor William Foxwell Albright wrote on the seminal influence of the Canaanites on Greek higher culture, including especially art and the beginnings of rational thought. In a number of ways, "The Phoenicians became the teachers of the modern world." The "language" of Canaan is reportedly a dialect variant of biblical Hebrew. We are indebted to them for the alphabet and even for many of the rich Hebrew forms encompassed in biblical literature. Albright held that "Through Greece and Israel, Canaan exerted an incalculably great influence on the modern world."

"To what," I asked General Dayan, "do you attribute your fascination with the Canaanites?"

"They had an incredible effect upon virtually all societies of their and even our time. This is particularly true of their concept of fertility. Their efforts to assure the fertility of their crops, the fertility of their flocks, and the fertility of their women influenced almost every society they came in contact with," he said.

I had been sensitive to the close interrelationships of the people of prebiblical and biblical times as reflected in their common concerns with death and resurrection but I had never completely registered the implications of Moshe Dayan's remarks on the fertility cult. Heaven knows, I had handled enough fertility goddesses and been exposed to enough archaeologic fertility material.

For some reason or other the comments of Dayan triggered off a new perspective on this issue. I think I know why. I had just been the recipient of quite a number of letters attacking some articles I had written on the subject of ZPG. I had always seen the issue of the right to life related to moral precepts, to personal rights and religious beliefs. But for some reason it had never occurred to me that Western concepts were so deeply rooted historically in the biblical land of Canaan and disseminated by the bold Phoenician mariners I remembered from my school days.

The Change in Our Lifetime

What an incredible inversion has occurred in history! For all of unrecorded time and for most of man's history his survival related to his "fruitfulness." When God spoke to Adam and Eve, he said: "Be fruitful and multiply." God's promise to Abraham was that his offspring would be as numerous as the stars in the heavens. This goal had previously been sought by all peoples through the polytheistic faiths of the pre-biblical times and through the worship of fertility goddesses.

It is one thing to know, and another thing to really understand the significance of the great change that urbanization has brought to us. Initially man's survival was severed from hunting and the gathering of berries and wild grains by his success in agriculture and the domestication of animals. But with such a change, the stability and wealth of men, their tribes and societies became dependent upon fertility. In certain aspects this was true even unto our own day when the development of these United States required constant increase in numbers and infusions of new populations to till our soil, to open the lands of the west and to man our factories. But now, in our lifetime, for the first time in history, the point is made that man's survival on this planet is dependent upon the limitation of his numbers.

I have tried in the past to address this issue as dispassionately as I could. I had viewed the historic facts from certain perspectives and even resorted to computers to analyze data. What I had not counted on was the enormous emotional charge implicit in man's beliefs and faiths. The heat of the passionate debates becomes more understandable. I had never viewed the population situation from point of view of the millennial fertility cults of almost all societies and, now, the new challenge of what has become an anti-fertility cult which holds forth as man's ideal, ZPG—Zero Population Growth.

* * *

That afternoon we also touched upon Dayan's interest in Egyptian sarcophagi and General Dayan commented on his reading of the hieroglyphics on one such we had viewed together.

"You read hieroglyphics?" My surprise was evident.

"Yes," Moshe Dayan replied with a half-abashed smile, "but not like I read the *New York Times*."

EPIGRAMS—Clinical and Otherwise

The best doctors in the world are Doctor Diet, Doctor Quiet, and Doctor Merryman.

Jonathan Swift
(1667-1745)
Polite Conversation, Dialogue 2

Cerium Nitrate 'Spectacular' In Preventing Burn Infections

Continued from page 1

during which we have treated patients with silver compounds, either silver nitrate or silver sulfadiazine," Dr. Monafo told the American Burn Association, "we noticed a striking difference in the flora on wounds as soon as cerium was introduced."

In small wounds, nearly 100% of the cultures taken after treatment with the topical agent containing ceritim nitrate were sterile. In moderate sized burns, the sterile culture yield was about 75%.

"Our results to date in 45 patients could only be described as spectacular," Dr. Monafo declared. "Gram negative and gram positive bacteria were suppressed and we are running a percentage of sterile cultures on the order of 80% regardless of the size of wound."

Of nine patients with massive injuries who previously could not have been saved, seven have survived. Only 8% of their cultures contained any gram negative bacteria.

"Of course the bacteriological data are only part of the issue," said Dr. Monafo. "The important thing is that the clinical response of these patients has correlated with the improvement in bacteriostasis."

wine talk

By JOHN CHAMBERS
Author and Consultant to Morrell & Company, New York Wine Merchants

Greek and Roman Wines

I WAS REMINDED of my promise to return to the subject of ancient Greek and Roman wines by a Greek friend. He asked, "What did my ancestors drink 2000 years ago?"

Wine was extremely important in Greek culture, and some of the finest examples of Greek artistry are wine cups, pitchers, kraters, and other utensils used in the storage and service of wine. It is impossible to know with certainty how these ancient Greek wines would have tasted, but we can make some educated guesses. The practice of placing grapes on straw mats to dry out (thus concentrating their sweetness) was learned early, and consequently many of the wines were sweet.

This sweetness served to hide excessive oxidation and retard spoilage—important since the wine was stored in rag-stoppered jars. Indeed the Greek habit of adding herbs, spices, and even perfume suggests that much wine was spoiled and had to be disguised to be made palatable.

Nonetheless, there were some good wines, of which the best were the thick, concentrated, moderately sweet red wines, such as Chian and Moronean, and the naturally sweet muscats of the Greek islands. The Muscat produced on the Island of Samos today is probably the closest we can come to the storied Pramnian wine of Greek literature.

Increasing Sophistication

With the development of the Roman civilization, grape-growing and wine-making techniques became increasingly sophisticated. The Romans developed the concept of pruning to produce more concentrated fruit, and of grafting to combine the root vigor of one vine with the fruit qualities of another. The creation of the wooden cask and the bottle were Roman innovations.

However, most of what was drunk by the Romans never saw a bottle and was very similar to what you would find today if you were travelling through Italy, drinking the local wine: full-flavored, robust, rather strong wines, served with a minimum of ceremony. Such wines, stored in wood or earthenware amphorae, were usually diluted with water.

The best wines were kept in small amphorae at first, and later in bottles. Resembling originally the concentrated, moderately sweet red wines of the Greeks, these became drier as storage techniques improved. Falernian, the most prized wine of Ancient Rome, was probably such a wine; heavy with tannin, it required long aging. It was said to last a hundred years and more. It was the Romans, by the way, who planted the vineyards of France and Germany; they found that grape-growing stabilized the population.

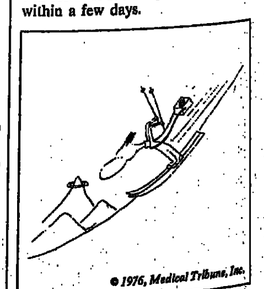
COMING UP—QUESTIONS & ANSWERS: *Please send me your questions about wine. What wines would you like evaluated? When should you consume some wines? What vintages are good to buy for laying down? Are you wondering what wineries you might visit? Send in your questions, and you'll get an answer, either in the column, or from me directly.*

Neostigmine Used in Treatment of Snakebite

Medical Tribune World Service

NEW DELHI, INDIA—Neostigmine has been successfully used in the treatment of snakebite unresponsive to conventional treatment, according to Lt. Col. R. N. Banerji, senior physician at Safdarjang Hospital here.

A 50-year-old patient bitten by a cobra was admitted to hospital in critical condition with respiratory and muscular paralysis and placed in an intermittent positive pressure respirator. When antivenom and steroid injections had no apparent effect, Dr. Banerji decided to try neostigmine because of the similarity between the patient's symptoms and those seen in myasthenia gravis. Normal respiration was restored and the patient discharged within a few days.



77% of U.S. Family Physicians Would Consider Passive Euthanasia

Continued from page 1

centarium of sophisticated life-support methods and equipment. Moreover, the Karen Ann Quinlan case, which had not yet been settled by the New Jersey State Supreme Court when the U.S. poll was taken, had abruptly—some say too abruptly—raised the level of public and professional debate over the issue of euthanasia to an unprecedented pitch. These, as well as other factors, such as the relatively traditionbound character of French medicine, would lead one to postulate a more open attitude towards euthanasia on the part of U.S. physicians than among their French counterparts.

The MEDICAL TRIBUNE poll did not attempt to assess the attitudes of physicians towards the many ambiguities arising in particular cases, but rather strove to establish a consensus on euthanasia's place in family medical thinking. The final decision of the New Jersey court in the Quinlan case, recommending the establishment of hospital "ethics committees"—on which family doctors will undoubtedly be called to serve—renders the results of the poll all the more compelling.

Approximately 2,200 family physicians, randomly selected from around the country, were sent ballots containing four categories of questions. The rate of response was about 30%.

Over half the physicians stated that at least once in their careers a patient had requested that his or her suffering be "cut short," which is on a par with the experience of French general practitioners. As would be expected, more older physicians had encountered this situation than younger ones with fewer years of practice. In the middle category of physicians, 54% replied "yes" compared to 62% of French practitioners. It should be noted that this first question (see page 1) does not take into account the situation typified by the Quinlan case, where the family, not the patient, made the request. Beyond that, one is led to wonder how often physicians fail to read the signals a terminal patient may be sending. It is well known, for example, that certain types of patients, particularly those whose ethnic and educational backgrounds are different from those of their physician, "find it difficult to communicate with physicians and presumably to engage in the delicate type of negotiations required in order to obtain withdrawal of medical treatment," states Diann Crane, Ph.D., of the department of sociology, University of Pennsylvania.

One also wonders whether surgeons or other specialists might not be more likely to have encountered patients seeking relief from terminal suffering than their colleagues in general practice, who may leave the case as specialty skills become required.

After the war, such events were dim and, moreover, medical technology was introducing a whole new set of concerns. For example, intensive care monitoring, essentially unknown in the 1940s and even the 1950s, arrived on the scene. And, in 1968, the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death enunciated its revolutionary new criteria.

As to active euthanasia, the poll shows that almost two-thirds (61%) of the Americans surveyed are opposed—significantly below the French figure (83%). It's not that a high percentage favor active euthanasia—17%, which is fairly comparable to the French findings—but rather a sizable number of American physicians opted for "no comment" (22% vs. 4%). Was this refuge sought in order to avoid expressing a disturbing attitude or does it simply reflect thoughtful indecision? Whatever the case, it would appear that U.S. physicians are potentially more flexible on the issue of active euthanasia than the French.

Faced with a terminal patient whose suffering seems unbearable can one, in your opinion, consider . . .

	TOTAL	Age of Physicians: 35 years and less	36 to 50 years	Over 50 years
Passive euthanasia				
Yes	77%	80%	81%	73%
No	14%	11%	12%	16%
No comment	9%	9%	7%	11%
Active euthanasia				
Yes	17%	15%	15%	18%
No	61%	59%	60%	61%
No Comment	22%	26%	25%	21%

Over three-quarters of all family doctors surveyed said they would "consider" passive euthanasia when faced with a terminal patient in "unbearable" suffering. In comparison, only slightly over half of their French counterparts answered the same—a highly significant difference. The factors previously cited—e.g., the proliferation of life-support capabilities in the U.S., the Karen Ann Quinlan case, and the traditionalism of French medicine—offer plausible explanations for these differences.

Another major difference in the outcome of the two polls lies in the patterns of response according to age. Whereas older French practitioners were more favorable towards passive euthanasia than younger ones, the current appears to run the other way among American family physicians. The disparity is hard to explain without delving into differences in national temperament, medical training and other factors.

However, one can speculate, regarding the American pattern itself, that older physicians may retain some of the attitudes of their training years—the 1930s, 40s and 50s—when public and professional discussion of euthanasia was sparse. Up until the mid-60s, according to Dr. Stanley Joel Reiser, Assistant Professor of History of Medicine at Harvard Medical School, "uncurable disease and death meant defeat for the physician as well as the patient; both appeared to prefer the remedy of silence." The reluctance of some physicians of that generation to talk openly may lie in events surrounding World War II, when, for example, some individuals in England and the U.S. suggested in the name of mercy that incurable mental patients become the objects of euthanasia. In Nazi Germany, of course, such proposals became social policy. As a result many physicians came to believe that euthanasia could too easily become a means to express natural aggression and that the practice, even if humanely applied, could demoralize medicine and society.

For the generation coming along theory might find it repugnant in practice.

A noteworthy difference between French and American responses is that while fully 25% of French practitioners accept euthanasia "at the doctor's initiative," only 13% of American family doctors agree with this concept. Whether this disparity could be attributable to the autocratic, traditionbound nature of French society, contrasting with the somewhat more open nature of our own, must remain speculative.

In addition, whereas the fewest number of French physicians agreed with "nt the joint request of patient and family," that same category proved the most acceptable to U.S. family doctors.

Some doctors accept euthanasia in certain instances cited below. In each case, do you agree with them?

Accept euthanasia		
Exclusively at the patient's request	Agree	22%
	Disagree	40%
At the joint request of the patient and his family	Agree	52%
	Disagree	10%
At the request of the family alone, the patient being unconscious	Agree	42%
	Disagree	20%
At the doctor's initiative	Agree	13%
	Disagree	49%
***Do not accept* euthanasia under any circumstances**		38%

Would you wish physicians had greater freedom to shorten the suffering of a terminal patient?

	TOTAL	Age of Physicians: 35 years and less	36 to 50 years	Over 50 years
Yes	48%	41%	48%	48%
No	43%	47%	44%	42%
No Comment	9%	12%	8%	10%

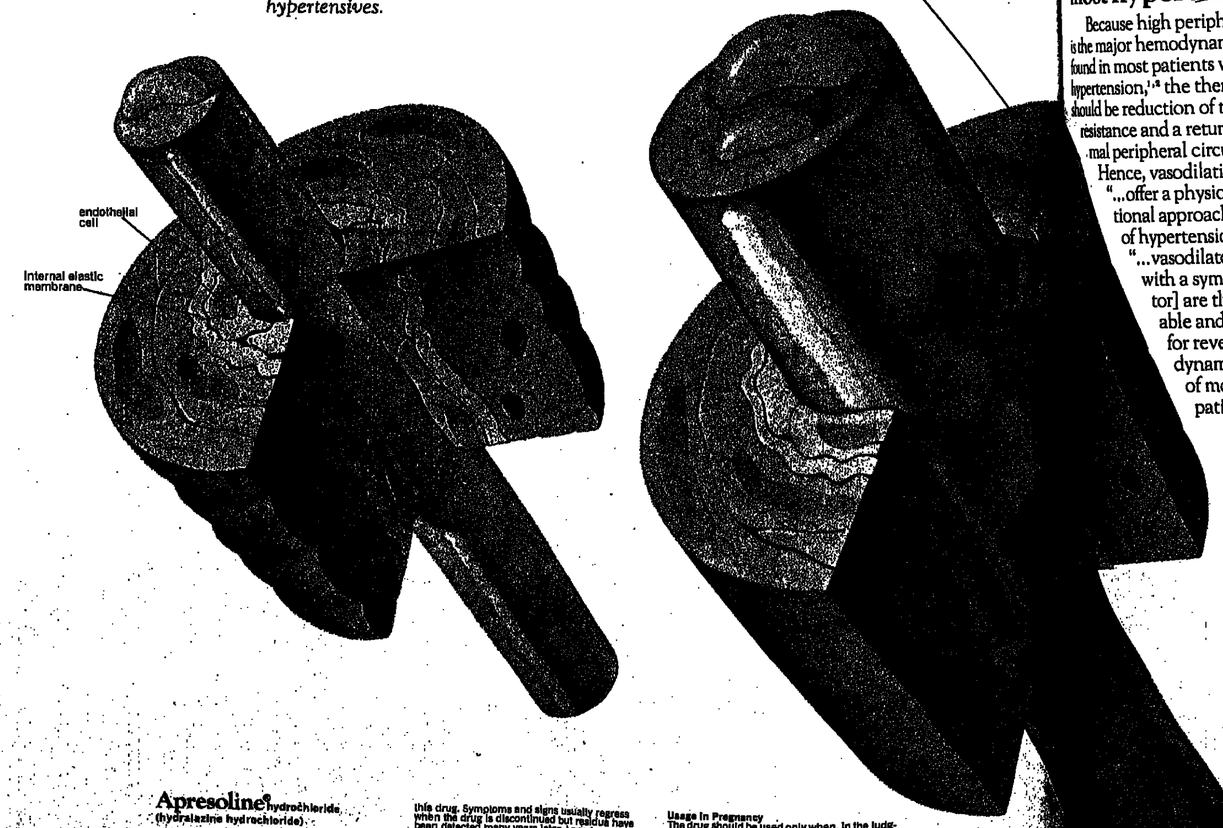
Almost half the American doctors surveyed expressed a desire for "greater freedom" to shorten the suffering of terminal patients; only about a third, of French practitioners were so inclined. It is possible that many family physicians who are willing to "consider" passive euthanasia (77%) shun the freedom to act, which would be consistent with the earlier observation of a gap between theory and practice. On the other hand, it's also possible that some of these physicians believe that sufficient freedom already exists, but that institutionalization of it would be detrimental to the individual doctor-patient relationship. How the respondents reacted to the New Jersey State Supreme Court's decision—which gave physicians greater freedom in cases like the Quinlan one—remains unknown.

What kind of picture emerges from the results of this poll? One can certainly discern a flexibility on the part of most family doctors on the issue of euthanasia. At the same time one senses hesitation and uncertainty, prompted, perhaps, by a wish to avoid becoming morally and legally entrapped. Certainly few physicians would sit tight for "euthanasia on demand." Nor do they wish autonomy for themselves. The path towards a solution, in the view of the American family doctor, lies through the trees.

Apresoline®...
(hydralazine)
relaxes arterioles to solve the major hemodynamic problem in hypertension

Abnormally high peripheral resistance is the major hemodynamic problem with most hypertensives.

Apresoline reduces peripheral resistance and lowers blood pressure through a direct relaxation of arteriolar smooth muscle.



high peripheral resistance: common attribute of most hypertensives

Because high peripheral resistance is the major hemodynamic disturbance found in most patients with essential hypertension,[1-3] the therapeutic goal should be reduction of total peripheral resistance and a return to more normal peripheral circulation.[1-3]

Hence, vasodilating drugs "...offer a physiologically rational approach to the therapy of hypertension."[1] In addition, "...vasodilators [combined with a sympathetic inhibitor] are the most predictable and specific drugs for reversing the hemodynamic abnormality of most hypertensive patients."[2]

the only oral agent that deals directly with this problem

Apresoline (hydralazine), the only currently approved oral antihypertensive with vasodilating action, decreases peripheral resistance — regardless of its cause — and, hence, arterial pressure by relaxing arteriolar smooth muscle. Accompanying the fall in blood pressure is a rise in cardiac output and rate. Apresoline also maintains or increases renal and cerebral blood flow.

a different and complementary pharmacologic approach

Different in action from all other oral antihypertensives and compatible with most of them, Apresoline can play a significant role in a variety of therapeutic combinations.

Such combinations, according to Freis,[4] with each component representing a different antihypertensive mechanism, provide the most effective way to control blood pressure. This approach may also permit lower drug dosages.

the problem of postural hypotension minimized

Nickerson[5] describes the action of Apresoline as follows:

"A preferential effect on arterioles, as compared to veins, allows the increase in cardiac output and minimizes postural hypotension; the latter is much less than that produced by agents blocking sympathetic nerves."

Continued on following page

Apresoline® hydrochloride
(hydralazine hydrochloride)

TABLETS

INDICATIONS
Essential hypertension, alone or as an adjunct.

CONTRAINDICATIONS
Hypersensitivity; coronary artery disease; mitral valvular rheumatic heart disease.

WARNINGS
Hydralazine may produce in a few patients a clinical picture simulating systemic lupus erythematosus. In such patients hydralazine should be discontinued unless the benefit to risk determination requires continued antihypertensive therapy with this drug. Symptoms and signs usually regress when the drug is discontinued but residua have been detected many years later. Long-term treatment with steroids may be necessary.

Complete blood counts, L.E. cell preparations and antinuclear antibody titer determinations are indicated before and periodically during prolonged therapy even though patient is asymptomatic. These studies are also indicated in the presence of any unexplained symptoms.

A positive antinuclear antibody titer and/or positive L.E. cell reaction requires that the physician carefully weigh the implications of the test results against the benefits to be derived from antihypertensive therapy with hydralazine.

Use MAO inhibitors with caution.

Usage in Pregnancy
The drug should be used only when, in the judgment of the physician, it is deemed essential to the welfare of the patient.

PRECAUTIONS
Use cautiously in suspected coronary artery or other cardiovascular diseases, cerebral vascular accidents, and advanced renal damage. Postural hypotension may occur, and the pressor response to epinephrine may be reduced.

Peripheral neuritis, evidenced by paresthesias, numbness, and tingling, has been observed. Published evidence suggests an antipyridoxine effect and addition of pyridoxine to the regimen if symptoms develop.

Blood dyscrasias, consisting of reduction in hemoglobin and red cell count, leukopenia, agranulocytosis, and purpura, have been reported rarely. If such abnormalities develop, discontinue therapy. Periodic blood counts are advised during prolonged therapy.

ADVERSE REACTIONS
Common: Headache; palpitations; anorexia; nausea; vomiting; diarrhea; tachycardia; angina pectoris. *Less frequent:* Nasal congestion; flushing; lacrimation; conjunctivitis; peripheral neuritis, evidenced by paresthesias, numbness, and tingling; adenal dizziness; tremors; muscle cramps; psychotic reactions characterized by depression, disorientation, or anxiety; hypersensitivity (including rash, urticaria, pruritus, fever, chills, arthralgia, eosinophilia, and, rarely, hepatitis); constipation; difficulty in micturition; dyspnea; paralytic ileus; lymphadenopathy; splenomegaly; blood dyscrasias, consisting of reduction in hemoglobin and red cell count, leukopenia, agranulocytosis, and purpura; hypotension; paradoxical pressor response.

DOSAGE
Initiate therapy in gradually increasing dosages; adjust according to individual response. Start with 10 mg 4 times daily for the first 2 to 4 days, increase to 25 mg 4 times daily for balance of first week. For second and subsequent weeks, increase dosage to 50 mg 4 times daily. For maintenance, adjust dosage to lowest effective level.
The incidence of toxic reactions, particularly the L.E. cell syndrome, is high in the group of patients receiving large doses of Apresoline.
In a few resistant patients, up to 300 mg Apresoline daily may be required for a significant antihypertensive effect. In such cases, a lower dosage of Apresoline combined with a thiazide, reserpine, or both may be considered. However, when combining therapy, individual titration is essential to insure the lowest possible therapeutic dose of each drug.

HOW SUPPLIED
Tablets, 10 mg (pale yellow, dry-coated); bottles of 30, 60, 100 and 1000.
Tablets, 25 mg (deep blue, dry-coated) and 50 mg (lilac, dry-coated); bottles of 30, 60, 100, 500 and 1000.
Tablets, 100 mg (peach, dry-coated); bottles of 100.

Consult complete literature before prescribing.

12868 93

CIBA
CIBA Pharmaceutical Company
Division of CIBA-GEIGY Corporation
Summit, New Jersey 07901

Clinical Trials

By Oldden

Successful Use of BCG Immunotherapy Hailed as "Milestone" in Lung Cancer

Continued from page 1

Albany researchers used was a live attenuated strain of mycobacterium tuberculosis bovum, an organism which has seen wide use as an antituberculosis vaccine as well as in the immunotherapeutic treatment of melanoma, Dr. McKneally said. The patients also received isoniazid for three months after BCG administration to reduce potential infection from the organism itself.

Results 'Preliminary'

Admitting that his results are "very preliminary" and will require verification by other investigators as well as more extensive, well-controlled clinical trials, Dr. McKneally said: "We're somewhat encouraged with our experience with patients with less extensive lung cancer."

At the conclusion of his presentation, several discussants went well beyond Dr. McKneally's restrained enthusiasm. For example, Dr. E. C. Holmes, of the University of California at Los Angeles, commented, "It's been a long time since we've heard an optimistic report on lung cancer . . . This paper may well usher in a new era in our approach to the management of resectable lung cancer."

Echoing those sentiments, Dr. Tom McMeester, of the University of Chicago, described the Albany work as "a milestone study in the treatment of cancer," while Dr. Griffith Pearson, of Toronto General Hospital, said it "was an extremely important piece of work and a very carefully executed study."

Dr. Pearson added that a multi-hospital clinical trial is now underway in Canada involving 300 lung cancer patients who will receive BCG by mouth for a one-year period. The dose schedule will vary from once a week in the early stages to once a month as the study progresses, he said. Although the study will not be completed until April, 1977, the BCG therapy has produced no adverse effects in the lung cancer patients.

In addition, discussant Dr. Lucius D. Hill, of the University of Washington in Seattle, reported preliminary results indicating that when BCG was administered to 26 lung cancer patients along with levamisole, the combination had "some beneficial effect" in Stage II and Stage III lung cancer patients, as well as in Stage I patients.

In spite of the generally enthusiastic comments about his treatment of Stage I lung cancer with BCG, Dr. McKneally insisted that it is too early for "physicians to go down to the corner drug store, buy a couple of vials of BCG and begin using it to treat their lung cancer patients."

He again stressed that his results were preliminary and that a longer term follow-up of the Stage I patients who apparently responded so well to BCG therapy might even show an increased level of recurrences as compared to patients who did not receive BCG. Also, he noted that Stage I lung cancer patients represent less than 25% of patients who present with the disease.

"Therefore, I think that it would be unwise to use BCG as a general form of therapy at this time. Only one strain (the Tice strain) has been tried and other strains may be disruptive or unhelpful in lung cancer," Dr. McKneally said.

His coauthors were Drs. Harvey W. Knusel and Ralph D. Alley, of Albany Medical College.

After Kidney Transplant...

Eighteen-year-old kidney transplant recipient shows off her newborn, delivered by cesarean section by Dr. George Solish, of Downstate Medical Center, Brooklyn, N.Y.

'Liquid Membranes' May One Day Counteract Drug Overdosages

Continued from page 3

ins, which tend to accumulate in the blood in chronic uremia, through the intestinal mucosa to the inside of the intestines, where they can be trapped by ingested liquid membrane capsules. Urea has been selected from many toxins as a model for the study," he said.

Inside the intestinal lumen, the urea is converted by endogenous urease or by additional urease encapsulated in LMCs to CO_2 and ammonia. The CO_2 can easily be eliminated by the lungs. The ammonia is then removed by LMCs of encapsulated tartaric acid. The acid ionizes the ammonia and traps it within the ion-barrier of the membrane, Mr. Asher explained. "We have already shown that LMCs function as well inside intestinal loops of dogs as they do in vitro," he added. "We also know that somewhat higher rates of ammonia trapping will be required before this can be considered a candidate for clinical application."

Work also continues with liquid membranes used for blood oxygenation in patients with pulmonary failure caused by reversible disease processes. This work, headed by Dr. Herbert Wallace, a surgeon also at the University of Pennsylvania, uses LMCs made of fluorochemicals surrounding oxygen bubbles, "thus preventing a blood-gas interface," Dr. Wallace reported in a paper on the studies. The exchange of oxygen and carbon dioxide by this technique is adequate. A prototype oxygenator is currently under evaluation. So far, the fluorochemicals, which are highly inert, have caused no significant changes in human blood in vitro, or in dogs perfused for four hours, Dr. Wallace said.

LMCs may also eliminate mercury and chromium poisoning by removing these metals from waste water, according to Toshio Kitagawa, Ph.D., of Osaka, Japan. Dr. Kitagawa said a pilot plant using LMCs has already been in operation in Japan for two years with promising results.

IMMATERIA MEDICA

Line Forms To Right

From the "Capital Wanted" advertising column of the *Wall Street Journal:*

> **WANTED:** Millionaire, seeking hobby. Small Ballet Co. with choreographer of considerable talent needs you. Fine documentary film available to introduce us to you. **Box O-115, Wall Street Journal.**

If we had a million, we'd rush right down in the expectation that this could only be Twyla Tharp and Company—and she should have ten millionaires supporting her work. Twyla Tharp—how can someone get an unforgettable name like that—does something that cannot be put into words—only into motion, and apparently only by her. One of the great observers of the human race, she has a clinical eye for the meaningful gesture, the flipped hand, the bent head, the sobering shrug. Without putting down Martha Graham, Balanchine, the Joffrey Ballet or any other group, it is plain that Twyla Tharp is not going to leave dance where it was.

One of these days she's going to come up with something called "Physical Examination" or "Visit to the Clinic," and then medicine won't be quite the same.

So millionaires, never mind the address, the box number and all that—just rush up to Twyla and give her the money and rejoice. The line forms to the right.

Medical Advice

That's the way the *Wall Street Journal* recently headed a brief item sent along by Dr. Edgar Richards of Long Island City. It read: "Consolidated Edison Co., at the request of the New York Heart Association, included a leaflet, 'How To Tell You're Having a Heart Attack,' with its . . . bills. Replied a Scarsdale, N.Y. doctor with his $158.76 payment: 'The juxtaposition of the booklet and your monthly bill is admirable. I would, however, suggest that if some way could be devised to have the customer read the booklet before the bill, many more lives could be saved.'"